Arch Iranian Med 2005; 8 (2): 147 – 149

Case Report

URETERAL METASTASIS AS THE FIRST MANIFESTATION OF ASYMPTOMATIC GASTRIC CANCER

Abbas Yazdanbod MD•*, Fatemeh Nojavan MD*, Reza Malekzadeh MD**

Ureteral metastasis from gastric cancer is rare. It is usually diagnosed in the setting of an advanced gastric cancer or on postmortem examination. Isolated ureteral metastasis without involvement of other sites is extremely rare. We describe a 67-year-old man with gastric cancer and right ureteral metastasis. The patient was from Ardabil Province, a high incidence area for gastric cancer in Iran. He presented with right flank pain which was found to be due to ureteral obstruction. Surgical relief of the obstruction was sought and the surgical biopsy specimens showed metastatic undifferentiated carcinoma in the ureteral wall. A search for the primary lesion revealed gastric cancer. He denied any symptoms referable to his upper GI tract. The patient is doing well on chemotherapy 6 months after the initial diagnosis.

Archives of Iranian Medicine, Volume 8, Number 2, 2005: 147 – 149.

Keywords: Gastric cancer • hydronephrosis • hydroureter • ureteral metastasis

Introduction

Ureteral obstruction caused by gastric cancer may occur by any of the following three mechanisms: direct extension from the primary site, peritoneal deposit, or lymph node metastasis. There have been a considerable number of indistinguishable cases.[1] This complication is usually seen in patients with advanced cancer[1, 2] or found at autopsy.[3] A sclerotic reaction induced by cancer cells invading the periureteral region without direct invasion of the ureter, may result in ureteral obstruction.[4 – 7] This condition is known as secondary or malignant retroperitoneal fibrosis.[3] Metastasis to the ureter from the primary site through lymphatics and/or blood vessels[8 – 9] may also happen but are quite rare. We encountered a patient with gastric cancer who presented with hydronephrosis caused by ureteral metastasis, without any symptoms referable to the primary lesion.

Case Report

A 67-year-old man was referred to the Aras Urology Clinic, Ardabil, Iran because of pain in his right flank and losing 10 kg within a month. There was no hematuria, micturition complaints, or renal colic. Physical examination was within normal limits except for some cachexia. An abdominal ultrasound examination revealed grade-2 hydronephrosis and hydroureter. Abdominal and pelvic CT scan was essentially normal except for the hydroureteronephrosis. Serum creatinine and urea levels were 1.3 mg/dL and 52 mg/dL, respectively. Other laboratory findings were normal except for mild anemia (Hgb: 12.7 g/dL, MCV: 96.6 fl). A slowly excreting right kidney was observed on intravenous urogram (Figure 1). During ureteroscopy, the catheter could not be passed beyond the ureteral stricture. The patient underwent a surgical ureterolysis and ureteroureterostomy. Histopathological examination revealed ureteral wall invasion by undifferentiated carcinoma. On immunohistochemical (IHC) staining, tumor cells were positive for cytokeratin (CK), epithelial membrane antigen (EMA), carcino-embryonic antigen (CEA), and negative for leukocyte common antigen (LCA), cytokeratin 7 (CK7), and cluster designation 20 (CD20). Vimentin as internal control of Ag

Authors affiliations: *Department of Gastroenterology, Ardabil University of Medical Sciences, Ardabil, **Digestive Disease Research Center, Tehran University of Medical Sciences, Tehran, Iran

•**Corresponding author and reprint:** Abbas Yazdanbod, MD, Department of Gastroenterology, Ardabil University of Medical Sciences, Ardabil, Iran. E-mail: yazdan40@yahoo.com.

Figure 1. A slowly excreting right kidney at intravenous pyelogram (6 hr later). Ureteroscopy showed a focal stenosis in right mid-ureter.

preservation was also positive in stroma. Both morphologic features (intact mucosa of the ureter) and IHC findings (negative CK7) were in favor of an undifferentiated carcinoma. The patient was

Figure 2. Endoscopic view of ulceroinfiltrative lesion in subcardia up to mid-lesser curvature, consistent with gastric cancer.

referred to the gastrointestinal (GI) clinic to look for the primary tumor. On endoscopy, there was an infiltrating gastric ulcer starting from the cardia and extending along the lesser curve halfway from the incisura (Figure 2). Biopsy showed a poorly-differentiated adenocarcinoma (Figure3). He was referred for chemotherapy and is doing well now six months afterwards.

Discussion

Distant ureteral metastasis first appeared in the literature in 1909,[10] and Schlagintweit reported the first case of gastric cancer metastasizing to the ureter in 1911.[11] Richie et al[12] found 160 cases in

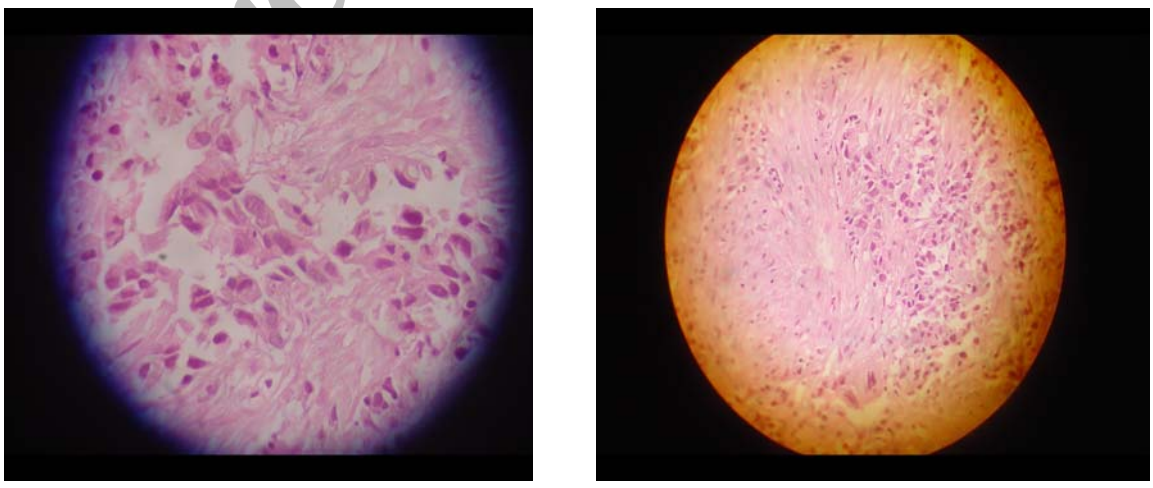

Figure 3. Histopathological view of gastric ulceroinfiltrative lesion consistent with a poorly differentiated adenocarcinoma.

published the literature up to 1979. Most of the tumors were diagnosed postmortem. The most common primary sites were breast, colon, prostate, and cervix. Distant metastasis from gastric carcinoma has occasionally been reported.[12 – 15] Differentiating between primary and secondary ureteral tumors may be rather difficult. MacKenzie and Ratner[8] first proposed rigid criteria for true ureteral metastasis, stating that in metastatic growths of ureters, malignant cells can always be demonstrated in the perivascular lymphatic spaces or in the blood vessels around the ureter. Later, Presman and Ehrlich[9] modified these criteria as follows: demonstration of malignant cells in a portion of the ureteral wall along with the absence of any neoplasm in adjacent tissues.[15] This modified criteria has been widely accepted and used. A focal stenosis in right mid-ureter without tumoral lesions around the right ureter or in the retroperitoneal space during surgery in our patient, indicates that it was a true ureteral metastasis from the stomach. There has been no report describing any effective therapy for this condition. Chemotherapeutic agents including cisplatin and 5-fluorouracil are used for these patients with disappointing results. Finding ureteral metastasis implies an advanced gastric cancer even if the primary lesion is not locally advanced.

References

1 Bartels EC. Carcinoma of the stomach with bilateral ureteral metastasis. *Minn Med*. 1933; **16:** 578 – 579.

2 Liaw CC, Chuang CK, Chen JS, Chang HK. Gastric cancer with obstructive uropathy: clinical experience with 17 cases. *Chang Gung Med J*. 1997; **20:** 286 – 292.

3 Cohen WM, Freed SZ, Hasson J. Metastatic cancer to the ureter: a review of the literature and case presentation. *J Urol*. 1974; **112:** 188 – 189.

4 Jonsson G, Lindstedt E, Rubin SO. Two cases of metastasizing scirrhous gastric carcinoma simulating idiopathic retroperitoneal fibrosis. *Scand J Urol Nephrol*. 1967; **1:** 299 – 302.

5 Thomas MH, Chisholm GD. Retroperitoneal fibrosis associated with malignant disease. *Br J Cancer*. 1973; **28:** 453 – 458.

6 Usher SM, Brendler H, Ciavarra VA. Retroperitoneal fibrosis secondary to metastatic neoplasm. *Urology* 1977; **9:** 191 – 194.

7 Dohmen K, Mizukami Y, Tanaka K, et al. Retroperitoneal fibrosis associated with scirrhous gastric cancer. *Gastroenterol Jpn* 1993; **28:** 699 – 705.

8 MacKenzie DW, Ratner M. Metastatic growth in the ureter. A report of three cases and a brief review of the literature. *Can Med Assoc J*. 1931; **25:** 265 – 270.

9 Presman D, Ehrlich L. Metastatic tumors of the ureter. *J Urol*. 1948; **59:** 312 – 325.

10 Stow B. Fibrolymphosarcomata of both ureters metastatic to a primary lymphosarcoma of the anterior mediastinum of thymus origin. *Ann Surg*. 1909; **50:** 901 – 906.

11 Schlagintweit F. Metastatische karzinose der ureteren mit anurie bei gleichzeitiger nephritis. *Z Urologie*. 1911; **5:** 665 – 671.

12 Richie JP, Withers G, Ehrlich RM. Ureteral obstruction secondary to metastatic tumors. *Surg Gynecol Obstet*. 1979; **148:** 355 – 357.

13 Fontana D, Garbarini A, Giraudi G. A case of gastric carcimoma revealed by a ureteral metastasis. *Panminerva Med*. 1974; **16:** 165 – 170.

14 Fitch WP, Robinson JR, Radwin HM. Metastatic carcinoma of the ureter. *Arch Surg*. 1976; **111:** 874 – 876.

15 Shimoyama Y, Ohashi M, Hashiyuchi N, et al. Gastric cancer recognized by metastasis to the ureter. *Gastric Cancer*. 2000; **3:** 102 – 103.